



Gp 1643

**PATENT**  
Docket No.: 28111/32729C

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In the Application of: McCafferty *et al.*

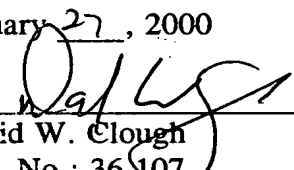
Serial No.: 09/417,479

Filed: October 13, 1999

For: "Methods For Producing Members  
Of Specific Binding Pairs

Group Art Unit: 1643

Examiner: Unknown

) I hereby certify that this paper and the  
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)  
) January 27, 2000  
)  
)   
) David W. Clough  
) Reg. No.: 36,107  
) Attorney for Applicants

#5  
DW  
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**INFORMATION DISCLOSURE STATEMENT**  
**WITH FORM PTO-1449**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

The Applicants request that the documents listed on the attached Form PTO-1449 be made of official record in the above-identified application and considered by the Examiner. The enclosed documents were disclosed in the text of the specification and are now being listed in PTO Form 1449 to ensure that a record is made that they have been considered. Pursuant to 37 C.F.R. §1.98(d), copies of documents A1-A16, B1, B4-B17, C3-C5, C13, C23-C25, C29-C31, C33, C35, C40, C43-C44, C51-C52, C56, C58-C64, C67, C72-C73, C76, C80, C82, C84-C86, C89, C93, C97, C99, C101, C103, C106, C111-C112, C117 and C119 are not enclosed because they were cited in one or more prior

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applications (U.S. Serial No. 08/484,893, filed June 7, 1995 and U.S. Serial No. 07/971,857, filed January 8, 1993, now U.S. Patent No. 5,969,108 issued October 19, 1999) that is presently relied upon herein for an earlier filing date. However, copies of these documents will be resubmitted at the Examiner's request.

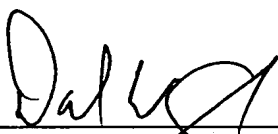
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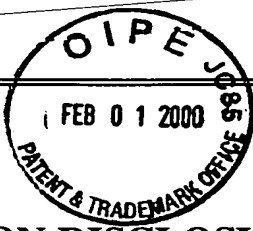
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January 27, 2000

By:

  
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1643

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**U.S. PATENT DOCUMENTS**

*Examiner Initials		Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
	A1	4,593,002	06/03/86	Dulbecco	435	172.3	
	A2	4,816,397	03/28/89	Boss <i>et al.</i>	435	68	
	A3	4,946,778	08/07/90	Ladner <i>et al.</i>	435	69.6	
	A4	5,091,513	02/25/92	Huston <i>et al.</i>	530	387	
	A5	5,223,409	06/29/93	Ladner <i>et al.</i>	435	69.7	
	A6	5,403,484	04/04/95	Ladner <i>et al.</i>	435	235.1	
	A7	5,427,908	06/27/95	Dower <i>et al.</i>	435	5	
	A8	5,658,727	08/19/97	Barbas <i>et al.</i>	435	6	
	A9	5,688,666	11/18/97	Bass <i>et al.</i>	435	69.4	
	A10	5,750,373	05/12/98	Garrard <i>et al.</i>	435	69.4	
	A11	5,759,817	06/02/98	Barbas, C.	435	69.7	
	A12	5,770,356	06/23/98	Light <i>et al.</i>	435	5	
	A13	5,780,279	07/14/98	Matthews <i>et al.</i>	435	172.3	
	A14	5,821,047	10/13/98	Garrard <i>et al.</i>	435	5	
	A15	5,846,765	12/08/98	Matthews <i>et al.</i>	435	69.1	
	A16	5,849,500	12/15/98	Breitling <i>et al.</i>	435		

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**FOREIGN PATENT DOCUMENTS**

*Examiner Initials		Document Number	Publication Date	Country	Class	Subclass	Translation	
							Yes	No
	B1	WO 83/02393	07/21/83	WIPO				
	B2	EP 2 137 631	10/10/84	EP				
	B3	EP 0 168 933	01/22/86	EP				
	B4	WO 88/06630	09/07/88	WIPO				
	B5	WO 88/09344	12/01/88	WIPO				
	B6	EP 0 324 162 A1	12/24/88	EP				
	B7	AU-B-27617/88	07/06/89	AU				
	B8	WO 90/02809	03/22/90	WIPO				
	B9	WO 90/05144	05/17/90	WIPO				
	B10	WO 90/14424	11/29/90	WIPO				
	B11	WO 90/14430	11/29/90	WIPO				
	B12	WO 90/14443	11/29/90	WIPO				
	B13	WO 91/10737	07/25/91	WIPO				
	B14	WO 91/17271	11/14/91	WIPO				
	B15	WO 92/06204	04/16/92	WIPO				
	B16	WO 92/09690	06/11/92	WIPO				
	B17	WO 92/18619	10/29/92	WIPO				

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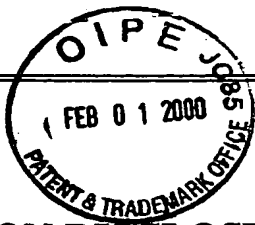
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C2	Armstrong, J. <i>et al.</i> , "Domain Structure of Bacteriophage fd Adsorption Protein," <i>FEBS Lett.</i> , 135(1):167-172 (November, 1981).
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C6	Berek, C. <i>et al.</i> , "Molecular events during maturation of the immune response to oxazolone," <i>Nature</i> , 316:412-418 (August, 1985).
C7	Better, M. <i>et al.</i> , "Escherichia coli Secretion of an Active Chimeric Antibody Fragment," <i>Science</i> , 240:1041-1043 (May, 1988).
C8	Bhat, T.N. <i>et al.</i> , "Small rearrangements in structures of Fv and Fab fragments of antibody D1.3 on antigen binding," <i>Nature</i> , 347:483-485 (October, 1990).
C9	Bird, R.E. <i>et al.</i> , "Single chain antibody variable regions," <i>TIBTECH</i> , 9:132-137 (April, 1991).
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C11	Boeke, J.D. <i>et al.</i> , "Effects of Bacteriophage f1 Gene III Protein on the Host Cell Membrane," <i>Mol. Gen. Genet.</i> , 186:185-192 (1982).
C12	Boyle, W., "An Extension of the <sup>51</sup> Cr-Release Assay for the Estimation of Mouse Cytotoxins," <i>Transplantation</i> , 6(6):761-764 (1968).
C13	Branden, C. <i>et al.</i> , in <i>Introduction to Protein Structure</i> , Garland Publishing, Inc., New York and London, pp.26-29 (1991).
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C15	Brownstone, A. <i>et al.</i> , "Biological Studies with an Iodine-Containing Synthetic Immunological Determinant 4-Hydroxy-3-iodo-5-nitrophenylacetic Acid (NIP) and Related Compounds," <i>Immunology</i> , 10:481-492 (1966)
C16	Brownstone, A. <i>et al.</i> , "Chemical and Serological Studies with an Iodine-Containing Synthetic Immunological Determinant 4-Hydroxy-3-iodo-5-nitrophenylacetic Acid (NIP) and Related Compounds," <i>Immunology</i> , 10:465-479 (1966).
C17	Carter, P. <i>et al.</i> , "Improved oligonucleotide site-directed mutagenesis using M13 vectors" <i>Nucl. Acids Res.</i> , 13(12):4431-4443 (1985).
C18	Casali, P. <i>et al.</i> , "Human Monoclonals from Antigen-Specific Selection of B Lymphocytes and Transformation by EBV," <i>Science</i> , 234:476-479 (October, 1986).
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C20	Chang, C. N. <i>et al.</i> , "Nuceotide sequence of the alkaline phosphatase gene of <i>Escherichia coli</i> ," <i>Gene</i> , 44:121-125 (1986).
C21	Chaudhary, V.K. <i>et al.</i> , "A rapid method of cloning functional variable-region antibody genes in <i>Escherichia coli</i> as single-chain immunotoxins," <i>Proc. Natl. Acad. Sci., USA</i> , 87:1066-1070 (February, 1990).
C22	Chiang, Y.L. <i>et al.</i> , "Direct cDNA Cloning of the Rearranged Immunoglobulin Variable Region," <i>BioTechniques</i> , 7(4):360-366 (1989).
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C26	Chothia, C. <i>et al.</i> , "Canonical Structures for the Hypervariable Regions of Immunoglobulins," <i>J. Mol. Biol.</i> , 196:901-917 (1987).

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C28	Clackson, T. <i>et al.</i> , "'Sticky feet'-directed mutagenesis and its application to swapping antibody domains," <i>Nucl. Acids Res.</i> , 17(24):10163-10170 (1989).
C29	Cunningham, C. <i>et al.</i> , "Antibody engineering - how to be human," <i>Trends Biotechnology</i> , 10(4):112-113 (April, 1992).
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C40	Fikes, J.D. <i>et al.</i> , "Maturation of <i>Escherichia coli</i> Maltose-binding Protein by Signal Peptidase I <i>in Vivo</i> ," <i>J. Biological Chemistry</i> , 265(6):3417-3423 (1990).

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	C41	Galfrè, G. <i>et al.</i> , "Preparation of Monoclonal Antibodies: Strategies and Procedures," <i>Methods Enzymology</i> , 73:3-46 (1981).
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	C43	Glockshuber, R. <i>et al.</i> , "The Disulfide Bonds in Antibody Variable Domains: Effects on Stability, Folding in Vitro, and Functional Expression in <i>Escherichia coli</i> ," <i>Biochemistry</i> , 31:1270-1279 (1992).
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	C47	Grant, R.A. <i>et al.</i> , "Structure of the Filamentous Bacteriophage f1," <i>J. Biol. Chem.</i> , 256(1):539-546 (January, 1981).
	C48	Griffiths, G.M. <i>et al.</i> , "Somatic mutation and the maturation of immune response to 2-phenyl oxazolone," <i>Nature</i> , 312:271-275 (1984).
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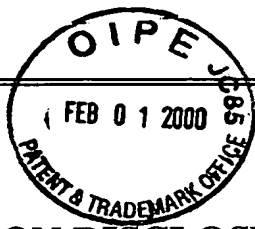
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C56	Huse <i>et al.</i> , "Generation of a Large Combinatorial Library of the Immunoglobulin Repertoire in Phage Lambda," <i>Science</i> , 246:1275-1281 (1989).
C57	Huston, J.S. <i>et al.</i> , "Protein engineering of antibody binding sites: Recovery of specific activity in an anti-digoxin single-chain Fv analogue produced in <i>Escherichia coli</i> ," <i>Proc. Natl. Acad. Sci., USA</i> , 85:5879-5883 (August, 1988).
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C59	Kabat <i>et al.</i> , <i>Sequences of Proteins of Immunological Interest</i> , 5th ed. pgs.339, 362, 430, 451 and 1418 (1991).
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C61	Kang, A.S. <i>et al.</i> , "Antibody redesign by chain shuffling from random combinatorial immunoglobulin libraries," <i>Proc. Natl. Acad. Sci., USA</i> , 88(24):1120-11123 (1991).
C62	Kang, A.S. <i>et al.</i> , "Linkage of recognition and replication functions by assembling combinatorial antibody Fab libraries along phage surfaces," <i>Proc. Natl. Acad. Sci., USA</i> , 88(10):4363-4366 (1991).
C63	Kettleborough, C.A. <i>et al.</i> , "Humanization of a mouse antibody by CDR-grafting: the importance of framework residues on loop conformation," <i>Protein Engineering</i> , 4(7):773-783 (1991).
C64	Kim, Y. <i>et al.</i> , "Refinement of Eco RI Endonuclease Crystal Structure: A Revised Protein Chain Tracing," <i>Science</i> , 249:1307-1309 (1990).
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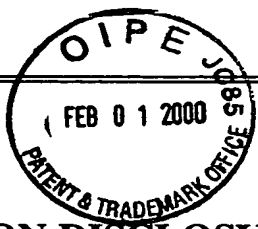
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